

Appl. No. : 10/654,542  
Filed : September 2, 2003

### AMENDMENTS TO THE CLAIMS

Claims 1-27 are currently pending. Please amend Claims 1, 7, 10, 11, 14, 15, 17, 20, and 27. Please cancel Claim 8.

1. (Currently amended) A carrier for processing a surface of ~~[[the]]~~ a workpiece using a process surface, comprising:

a carrier housing;

a base configured to hold the workpiece and movable with respect to the carrier housing; and

a pressure member between the base and the carrier housing, the pressure member configured to induce cause the base to apply a predetermined force onto the process surface, wherein a spring constant of the process surface is greater than a spring constant of the pressure member.

2. (Original) The carrier of claim 1, wherein the pressure member includes a spring.

3. (Original) The carrier of claim 1, wherein the pressure member is a compressed fluid controlled by a pneumatic system.

4. (Original) The carrier of claim 1, wherein the process surface is a surface of a workpiece surface influencing device.

5. (Original) The carrier of claim 1, wherein the process surface is a surface of a polishing pad.

6. (Original) The carrier of claim 1, wherein:

the carrier housing includes a cavity; and

the base includes a shaft configured to slide within the cavity.

7. (Currently amended) The carrier of claim 6, wherein the pressure member attaches the base ~~[[and]]~~ to the carrier housing, the pressure member being within the cavity.

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8. (Canceled)

9. (Original) The apparatus of claim 6, wherein the cavity includes bearings to minimize friction between the shaft of the base and the carrier housing as the shaft moves within the cavity.

10. (Currently amended) The carrier of claim 1, wherein the carrier housing includes a stop member and the shaft of the base includes a limiting member configured to mate with the stop member when the pressure member moves the shaft beyond a ~~predetermined~~ travel limit range of the base relative to the carrier housing.

11. (Currently amended) The apparatus of claim 10, wherein the pressure member is configured to cause the base to exert substantially ~~[[the]]~~ a same force against the process surface throughout the ~~predetermined~~ travel limit range of the base.

12. (Original) The apparatus of claim 1, wherein the carrier housing and the base are rotatably coupled to rotate as a single unit.

13. (Original) The apparatus of claim 12 further comprising a flexible diaphragm coupled to the base and the carrier housing.

14. (Currently amended) A method for processing a semiconductor wafer using a constant force carrier head comprising the steps of:

holding the semiconductor wafer with a base; and

urging the base with a pressure member to produce a substantially constant force ~~on a surface of the semiconductor wafer~~ against a process surface.

15. (Currently amended) The process of claim 14, wherein the process surface is a surface of a workpiece influencing device.

16. (Original) The method of claim 14, wherein the process surface is a surface of a polishing pad.

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17. (Currently amended) The method of claim 14, further comprising the step of providing relative motion between the base and the process surface.

18. (Original) The method of claim 14, further comprising the step of rotating the carrier head.

19. (Original) The method of claim 18, wherein the carrier head and the base rotate as a unit.

20. (Currently amended) The method of claim 14, wherein the pressure member ~~produces~~ causes the base to apply a constant force against the process surface along a displacement axis against the process surface.

21. (Original) The method of claim 14, further comprising the step of limiting a range of motion along a displacement axis of the base against the process surface.

22. (Original) The method of claim 14, wherein the pressure member is a spring.

23. (Original) The method of claim 22, wherein the process surface is compressible.

24. (Original) The method of claim 23, wherein a spring constant of the process surface is greater than the pressure member.

25. (Original) The method of claim 14, wherein the pressure member is pneumatic.

26. (Original) An article of manufacture using the method of claim 14.

27. (Currently amended) A method of processing a surface of a workpiece on a process surface while holding the workpiece with a carrier head, comprising:

contacting the surface of the workpiece to the process surface with a constant predetermined pressure, wherein the carrier head is configured to move the surface of the workpiece ~~contacting surfaces~~ along a displacement axis; and

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processing the surface of the workpiece with the processing surface while maintaining the ~~predetermined~~ constant pressure.